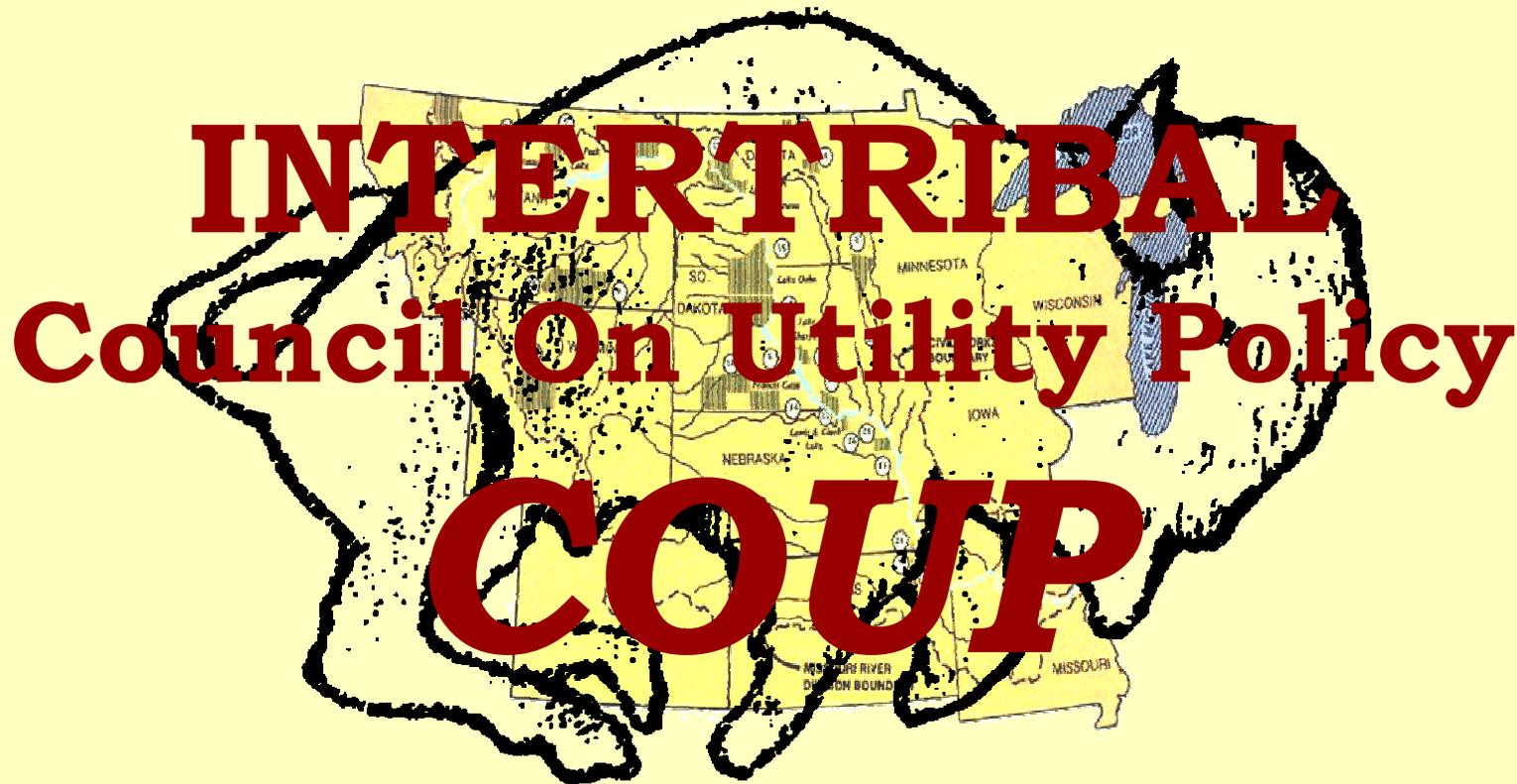


**DOE TEP 2004**



***Tribes Building Sustainable Homeland Economies***

***P.O. Box 25, Rosebud, SD 57570***

**Pat Spears, President - Lower Brule Reservation, SD**

**Terry Fredericks, Vice President - Ft. Berthold Reservation, ND**

**Bob Gough, Secretary - Rosebud Reservation, SD**

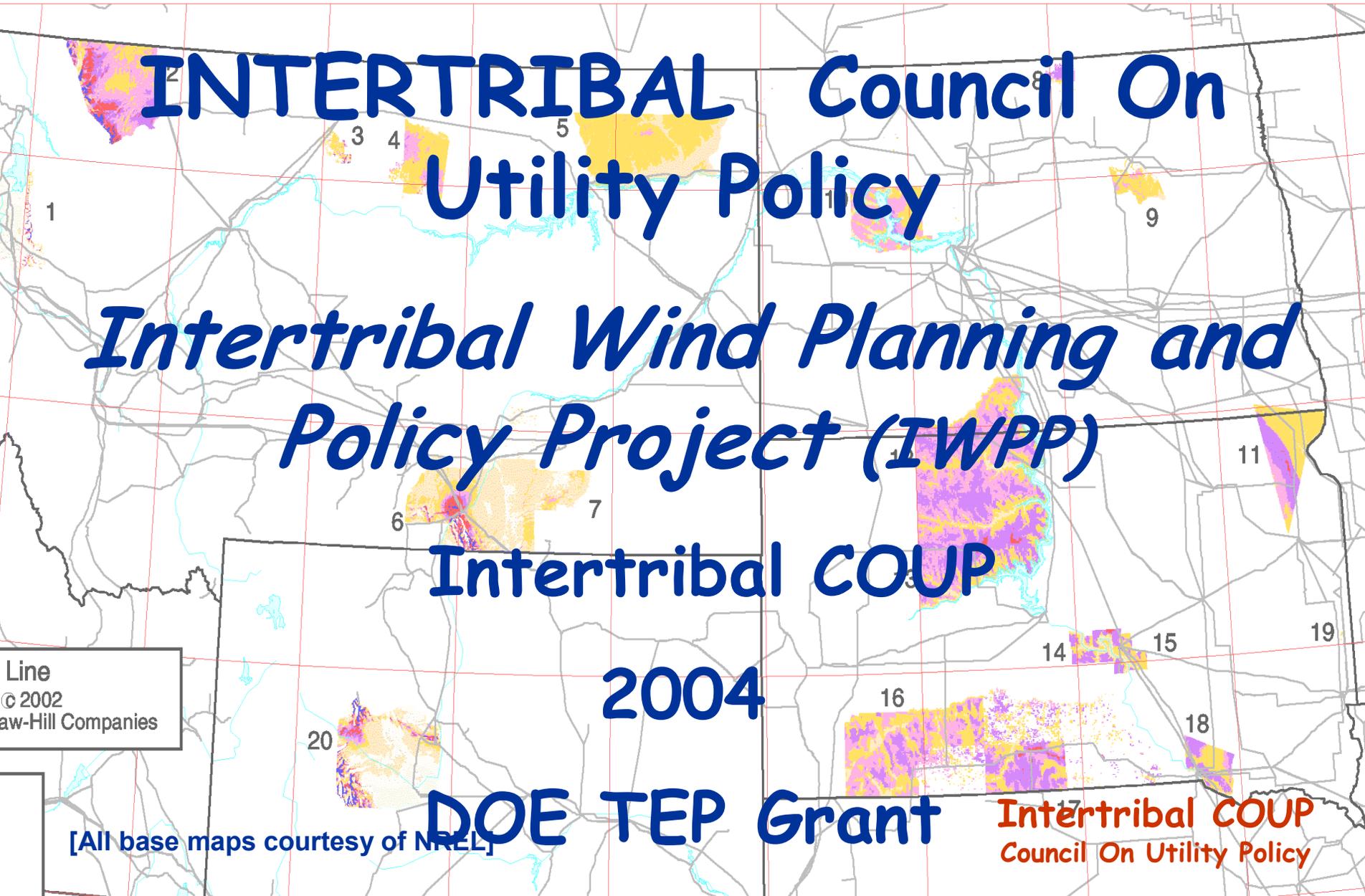
**Sam Allen, Treasurer - Flandreau Santee Reservation, SD**

**Rpwgough@aol.com**

***www.EnergyIndependenceDay.org***

# Northern Great Plains - Indian Reservation Wind Resource Map

114° 112° 110° 108° 106° 104° 102° 100° 98° 96°



**INTERTRIBAL Council On  
Utility Policy**

*Intertribal Wind Planning and  
Policy Project (IWPP)*

**Intertribal COUP**

**2004**

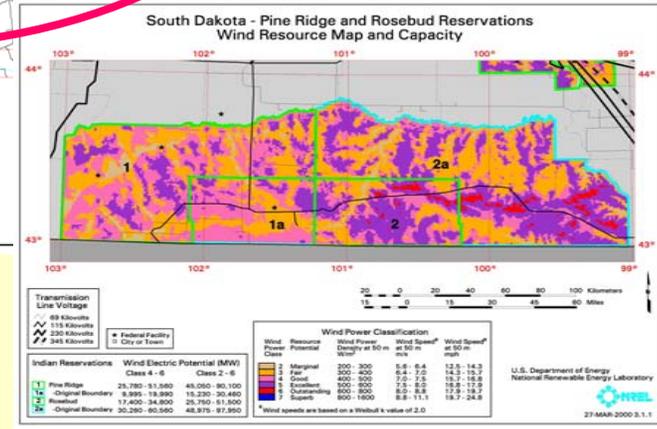
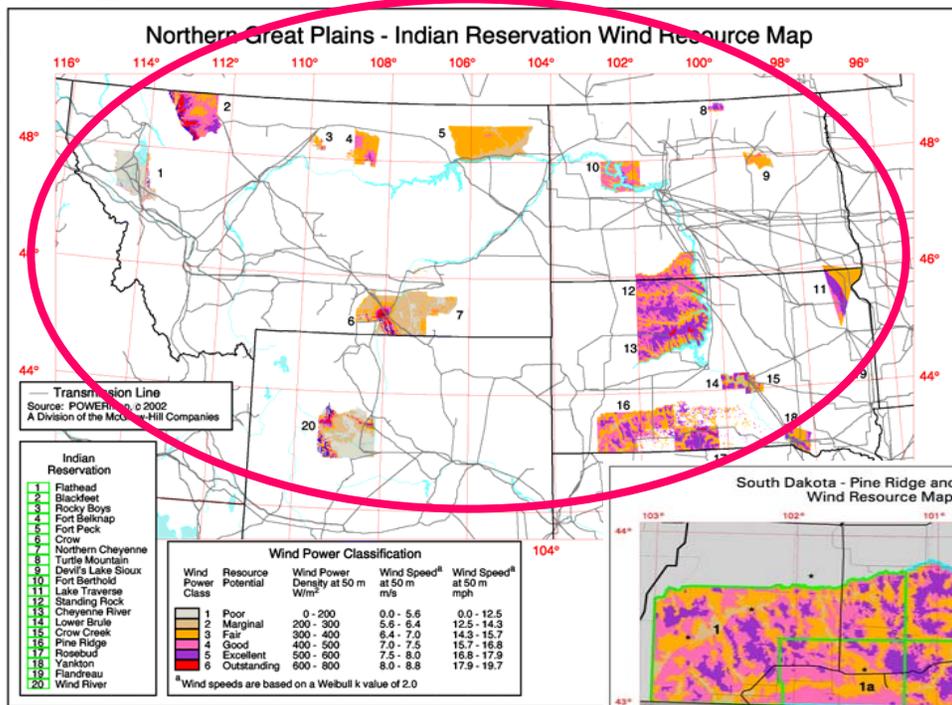
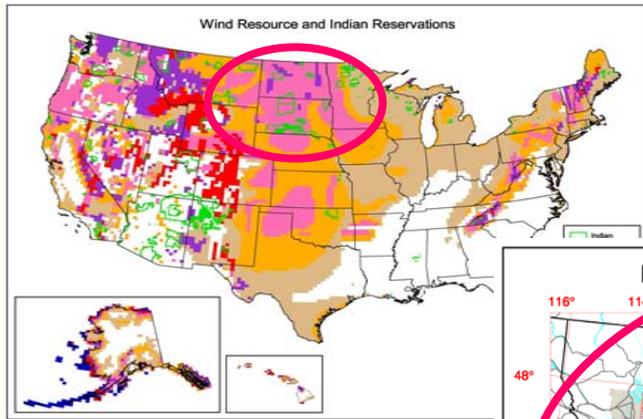
**DOE TEP Grant**

**Intertribal COUP  
Council On Utility Policy**

Line  
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[All base maps courtesy of NREL]

# The TREMENDOUS WIND POWER RESOURCES Found on the NORTHERN GREAT PLAINS INDIAN RESERVATIONS:



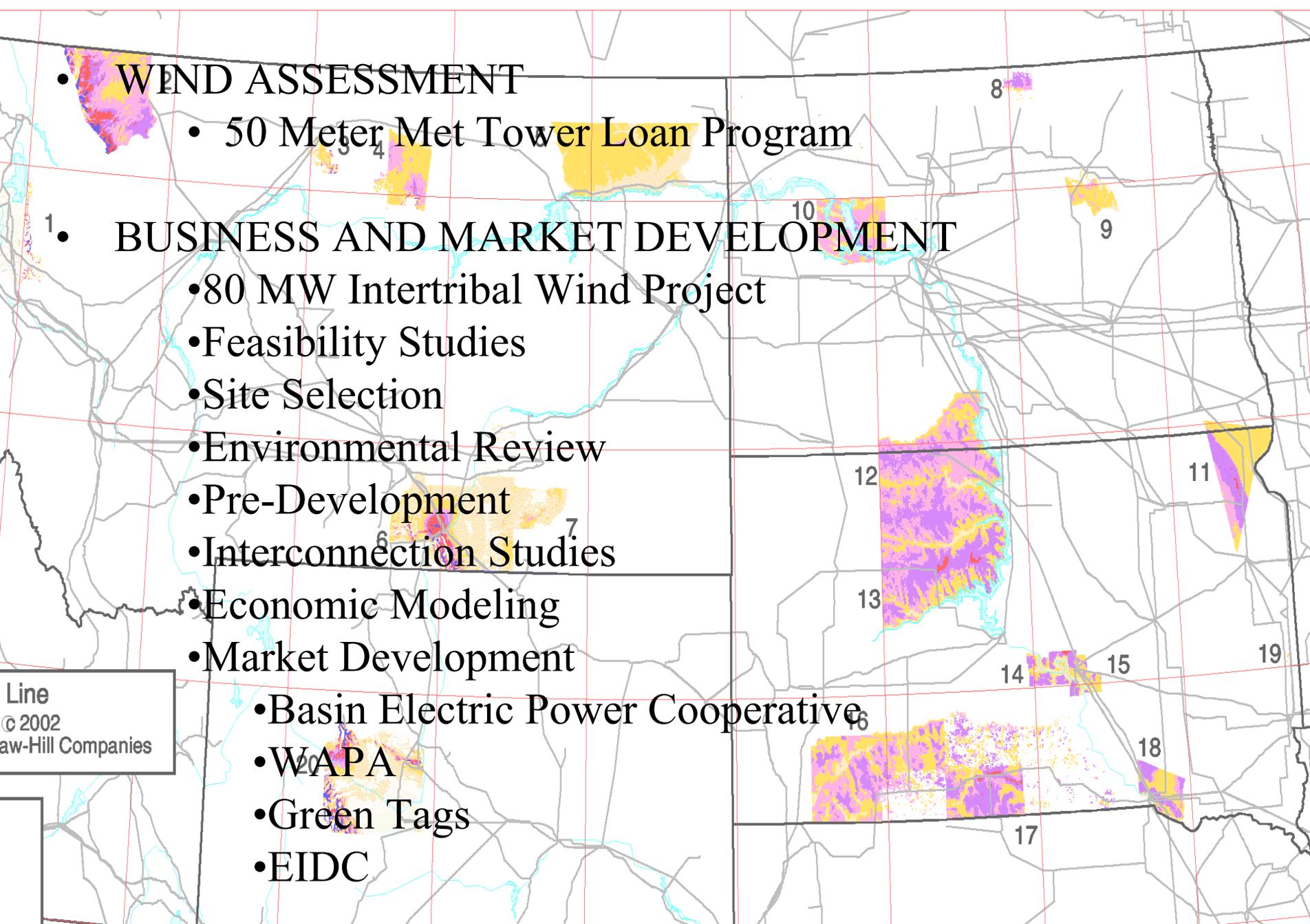
Twenty Northern Plains Indian Reservations hold several hundred gigawatts of wind power potential.

Wind power potential on these Indian Reservations alone is more than enough to meet North American Kyoto targets.

[www.EnergyIndependenceDay.org](http://www.EnergyIndependenceDay.org)

Intertribal COUP

# INTERTRIBAL WIND PLANNING AND POLICY PROJECT



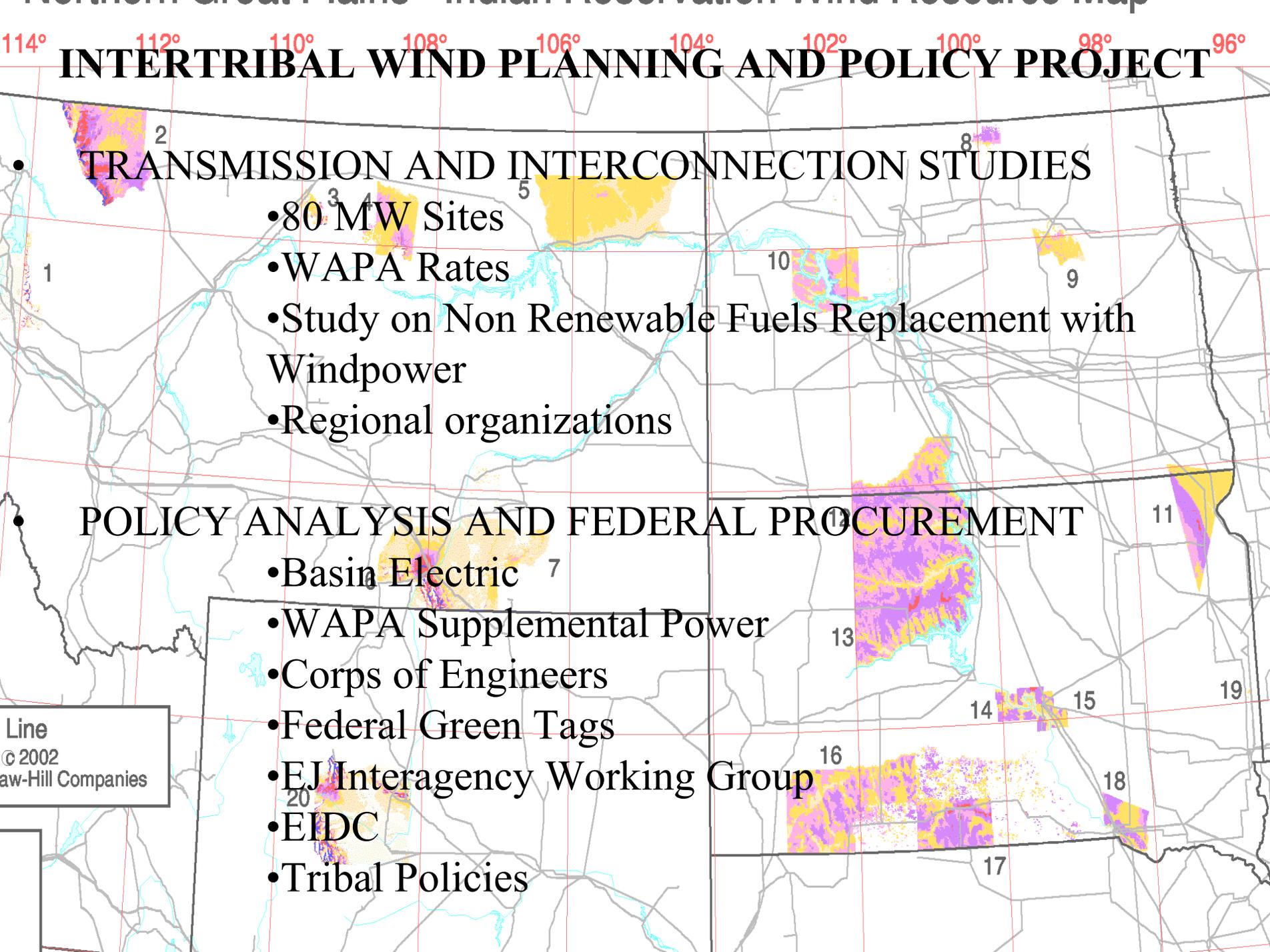
## • WIND ASSESSMENT

- 50 Meter Met Tower Loan Program

## 1. BUSINESS AND MARKET DEVELOPMENT

- 80 MW Intertribal Wind Project
- Feasibility Studies
- Site Selection
- Environmental Review
- Pre-Development
- Interconnection Studies
- Economic Modeling
- Market Development
- Basin Electric Power Cooperative
- WAPA
- Green Tags
- EIDC

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# INTERTRIBAL WIND PLANNING AND POLICY PROJECT

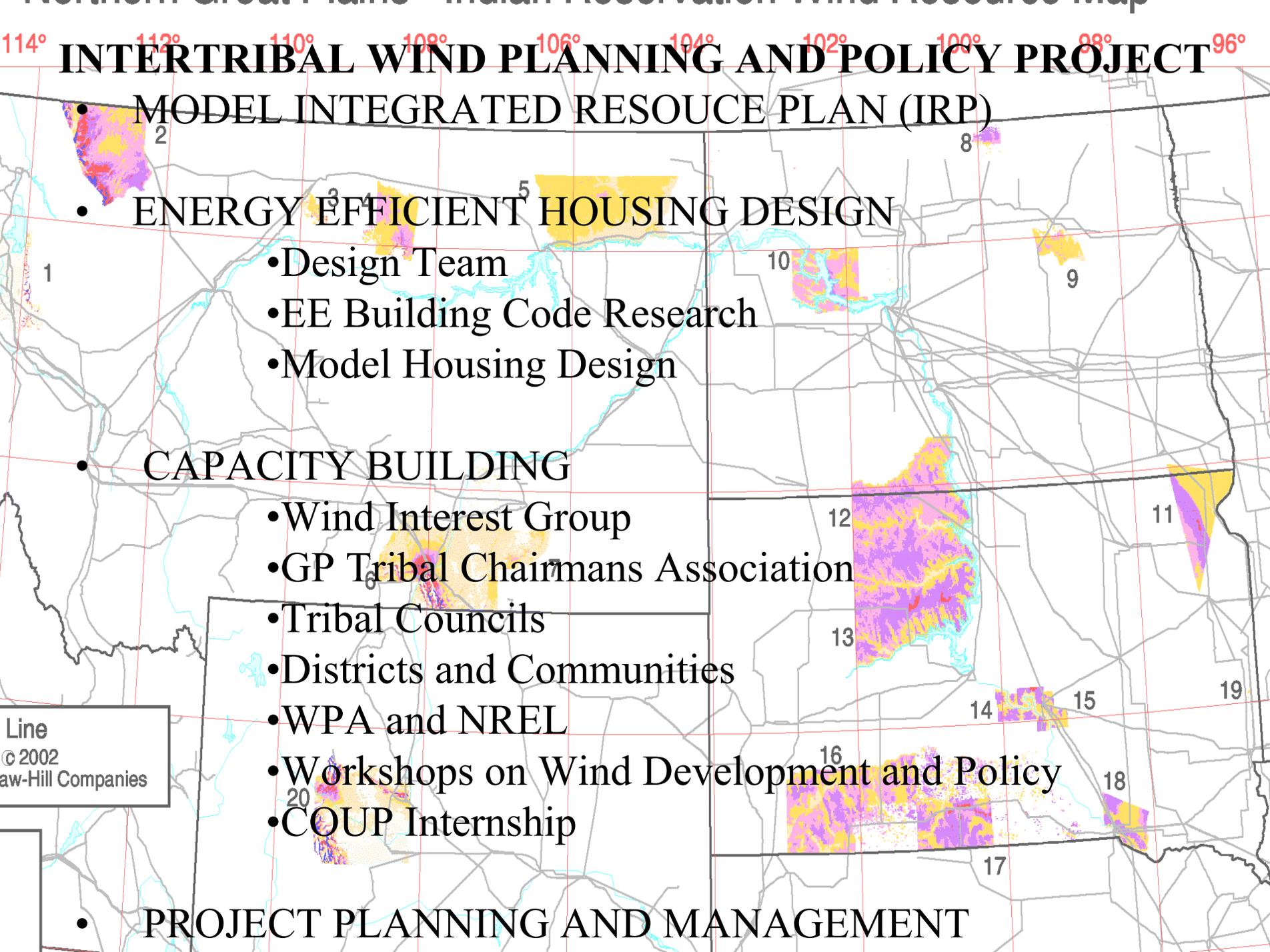
## TRANSMISSION AND INTERCONNECTION STUDIES

- 80 MW Sites
- WAPA Rates
- Study on Non Renewable Fuels Replacement with Windpower
- Regional organizations

## POLICY ANALYSIS AND FEDERAL PROCUREMENT

- Basin Electric
- WAPA Supplemental Power
- Corps of Engineers
- Federal Green Tags
- EJ Interagency Working Group
- EIDC
- Tribal Policies

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# INTERTRIBAL WIND PLANNING AND POLICY PROJECT

- MODEL INTEGRATED RESOURCE PLAN (IRP)

- ENERGY EFFICIENT HOUSING DESIGN

- Design Team
- EE Building Code Research
- Model Housing Design

- CAPACITY BUILDING

- Wind Interest Group
- GP Tribal Chairmans Association
- Tribal Councils
- Districts and Communities
- WPA and NREL
- Workshops on Wind Development and Policy
- COUP Internship

- PROJECT PLANNING AND MANAGEMENT

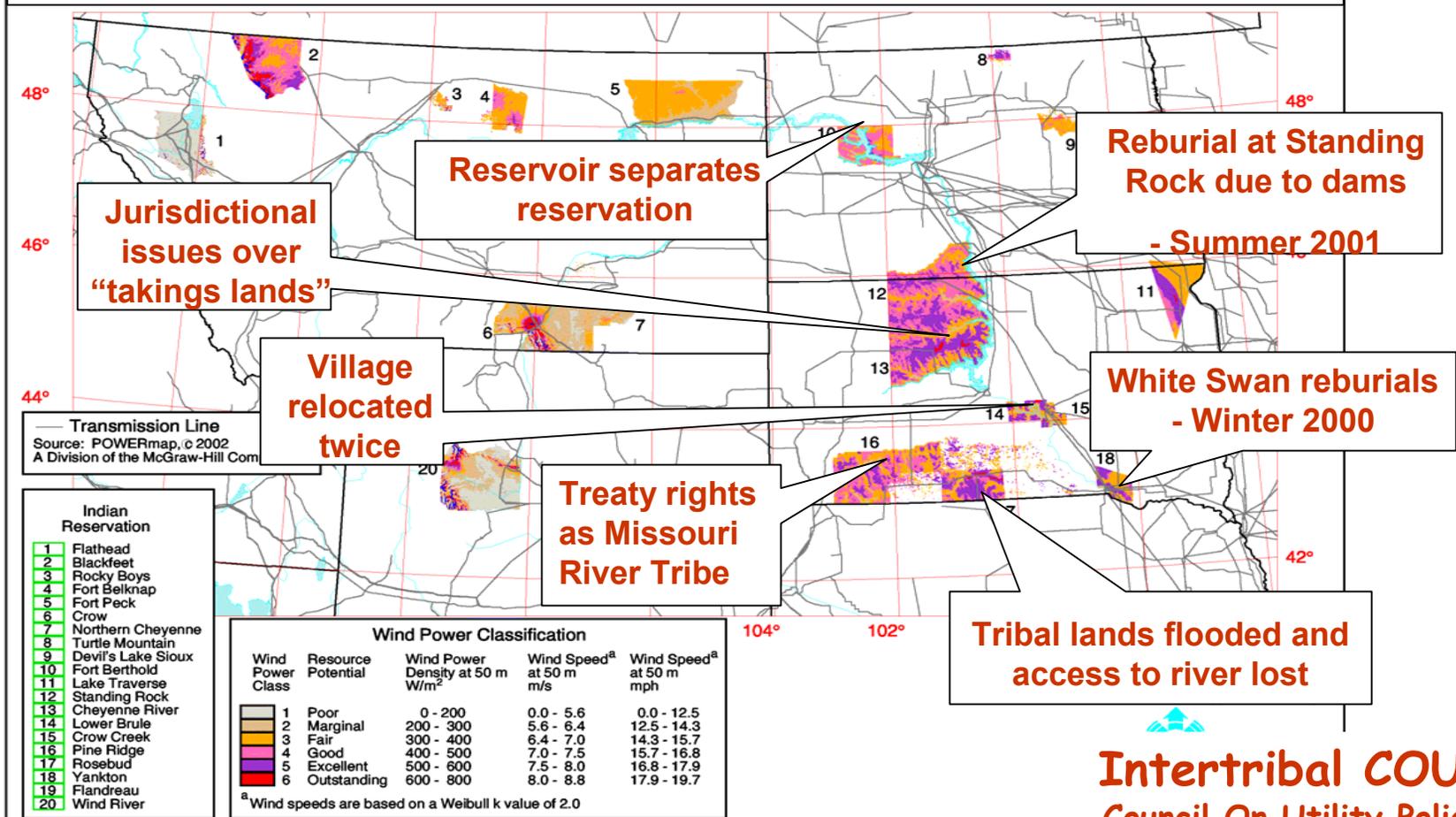
Line  
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Law-Hill Companies

# Intertribal Wind Planning and Policy Project

## Intertribal Council On Utility Policy (COUP)

Wind Resources on Northern Plains Reservations located in the Eastern Pick-Sloan Region (Upper Missouri River Basin) of the Western Area Power Administration (WAPA) Grid

### Past and ongoing Tribal Environmental Justice Issues Resulting from the Construction of Hydropower Dams



# *Rosebud Sioux & Intertribal COUP*

## *Environmental Justice Revitalization Plan:*

*3,000 MWs of Tribally Owned Wind Power Across the Northern Great Plains  
Financed Through Sales of Energy and Environmental Attributes ("Green Tags")*

### **Rosebud/COUP EJ Revitalization Tribal Wind Power Plan**

#### **Phase 1 (Up and Running):**

**750 kW Turbine on Rosebud Indian Reservation**  
**1st Tribally owned, large scale utility turbine**  
**Commissioned March 4th, Dedicated May 1st, 2003**

#### **Phase 2 (2004/5):**

**30 to 50 MW Wind Ranch on Rosebud Reservation**

#### **Phase 3 (2004/5):**

**80MWs: 10 MW Wind Ranches on 8 Reservations**

#### **Phase 4 (2004-2007):**

**Replicate across the Northern Great Plains**

#### **Phase 5 (2010):**

**3,000 Tribal MW on Great Plains Reservations**

**For additional details, please contact:  
Patrick Spears, Intertribal COUP  
605-945-1908 or Pnspears2@aol.com**

**or  
Phil Two Eagle, Director  
RST Resources Development  
605-856-5644 or PD2Eagle@gwtc.net**

***Tribal Wind Power for Sustainable Homeland Economic Development***

Intertribal COUP ©

**[www.EnergyIndependenceDay.org](http://www.EnergyIndependenceDay.org)**



**Intertribal Council On Utility Policy**



# FEDERAL-TRIBAL COLLABORATIVE PARTNERSHIP ENVIRONMENTAL JUSTICE REVITALIZATION Through RENEWABLE ENERGY DEVELOPMENT

- Grassroots Intertribal initiative to overcome environmental injustices and successfully realize Tribal aspirations for community revitalization and energy development
- Development of *Sustainable Tribal Homeland Economies* based upon renewable energy generation
- Long-term Tribal employment, development and capacity building in collaboration with federal departments and agencies

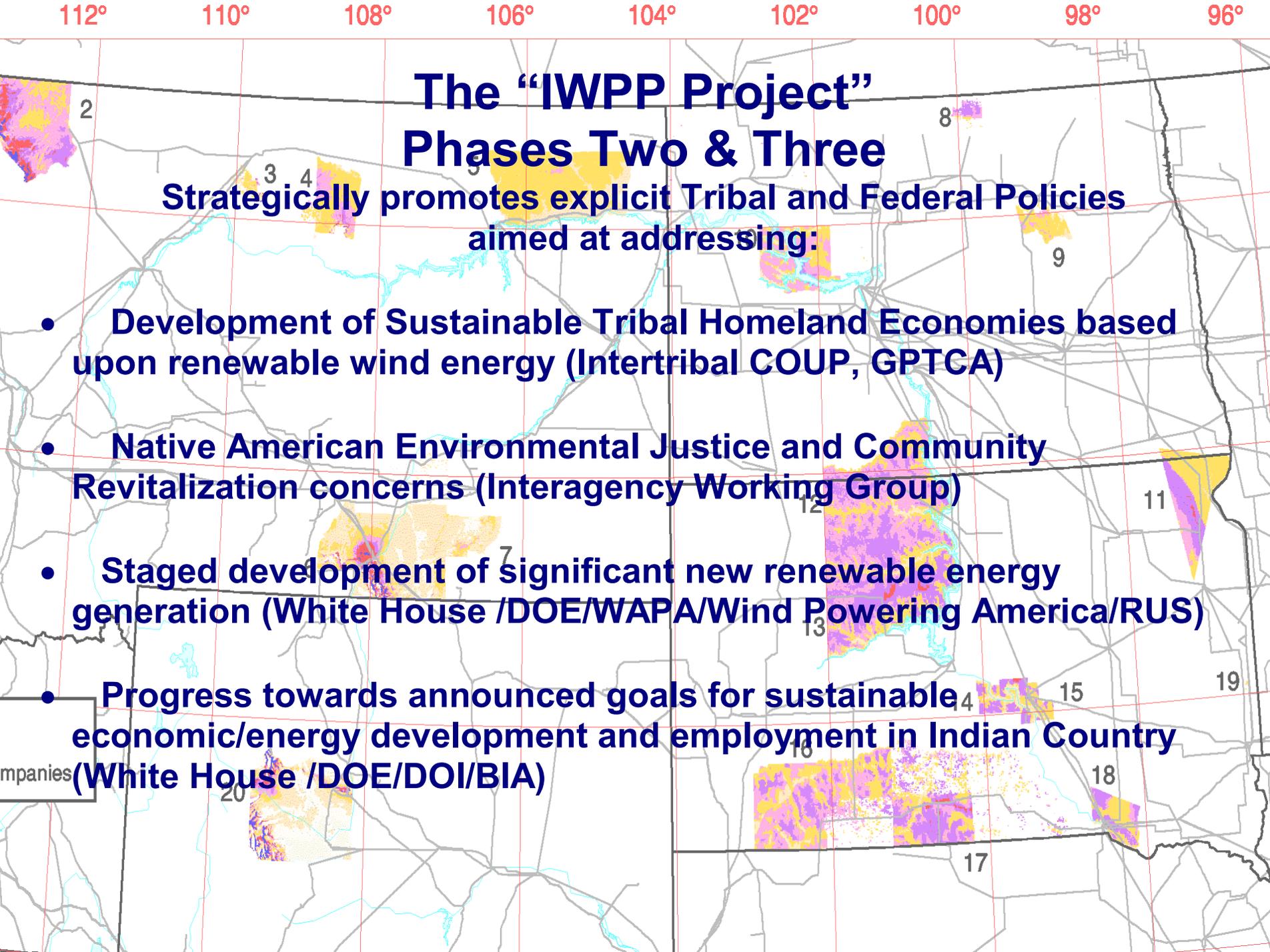
**Intertribal COUP**  
Council On Utility Policy

# IWPP Project”

## Phases Two & Three

Strategically promotes explicit Tribal and Federal Policies aimed at addressing:

- Development of *Sustainable Tribal Homeland Economies* based upon renewable wind energy (Intertribal COUP, GPTCA)
- Native American Environmental Justice and Community Revitalization concerns (Interagency Working Group)
- Staged development of significant new renewable energy generation (White House /DOE/WAPA/Wind Powering America/RUS)
- Progress towards announced goals for sustainable economic /energy development and employment in Indian Country (White House /DOE/DOI/BIA)



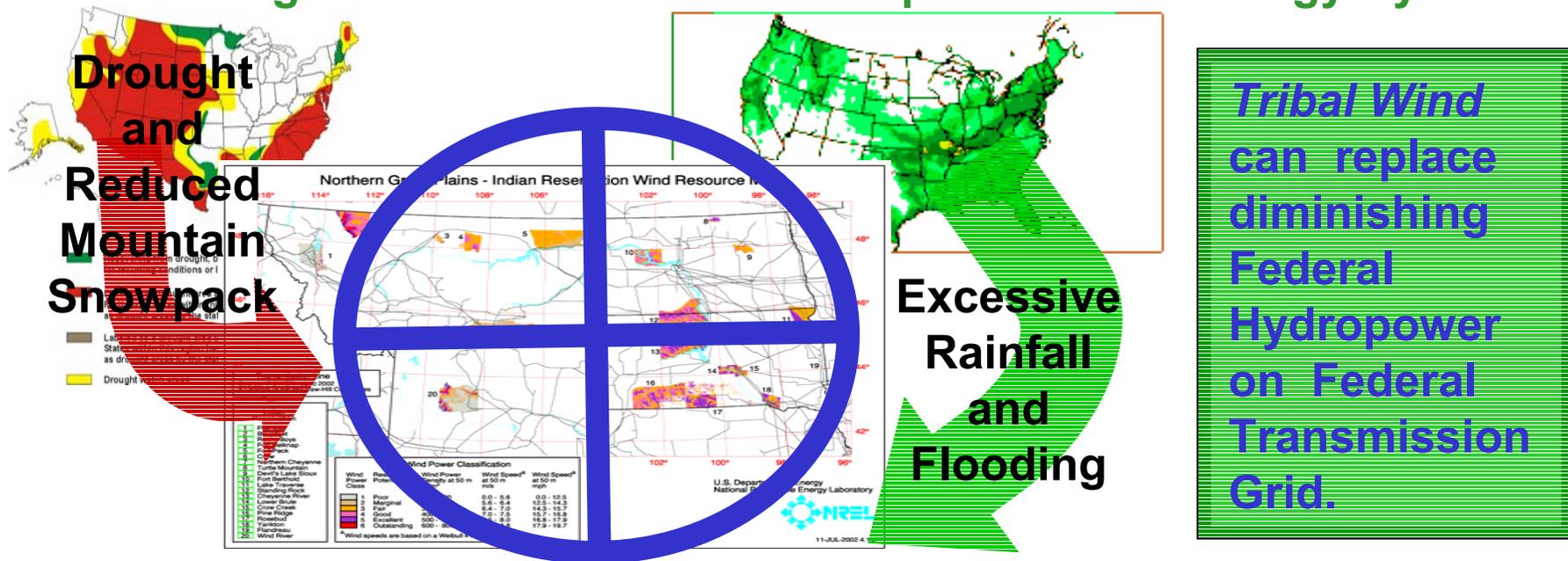
# The “IWPP Project” Phases Two & Three

**Strategically promotes explicit Tribal and Federal Policies aimed at addressing:**

- **Development of Sustainable Tribal Homeland Economies based upon renewable wind energy (Intertribal COUP, GPTCA)**
- **Native American Environmental Justice and Community Revitalization concerns (Interagency Working Group)**
- **Staged development of significant new renewable energy generation (White House /DOE/WAPA/Wind Powering America/RUS)**
- **Progress towards announced goals for sustainable economic/energy development and employment in Indian Country (White House /DOE/DOI/BIA)**

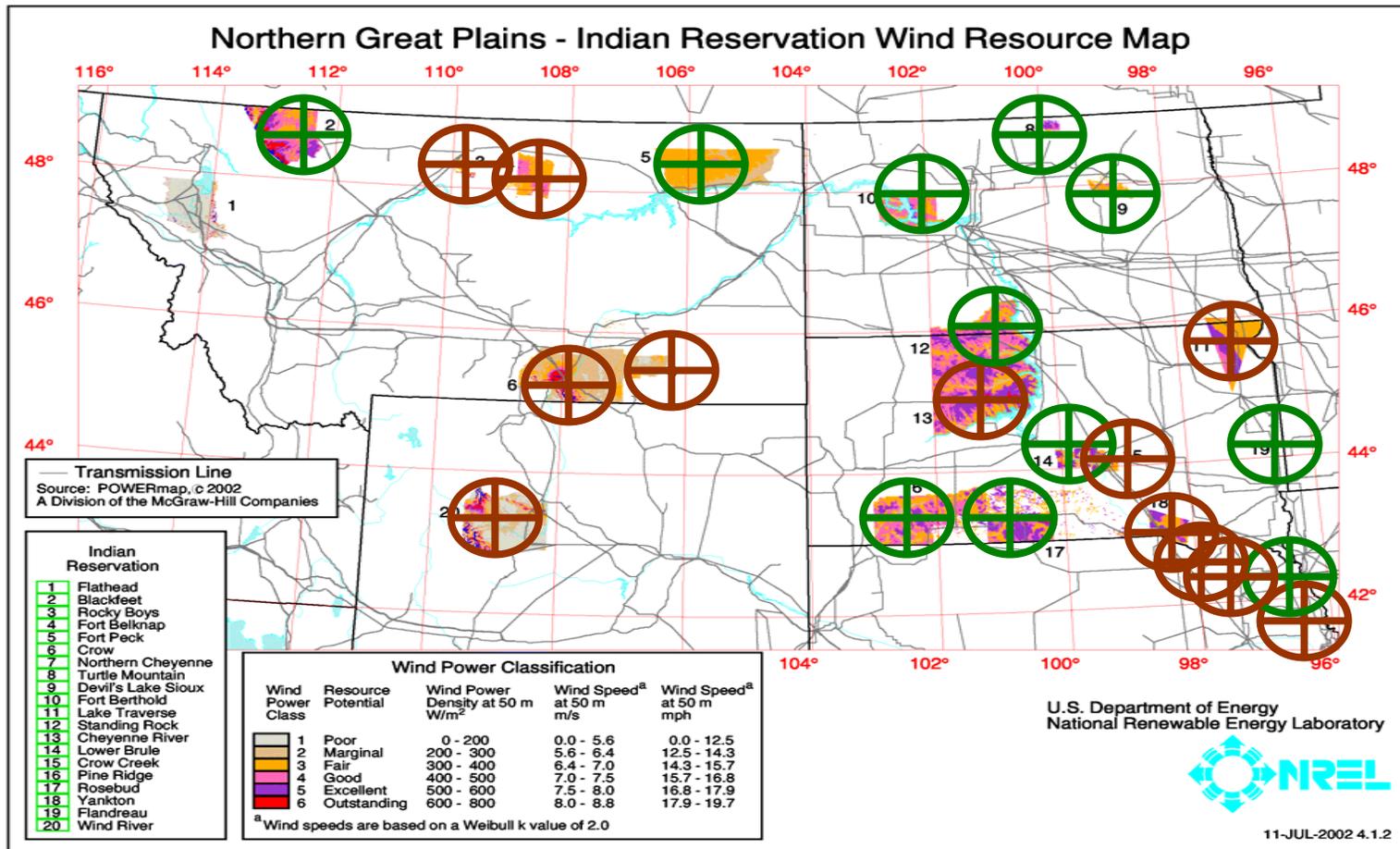
# TRIBAL WIND - FEDERAL HYDROPOWER:

## Breaking the Positive Feedback Loop in the CO2 Energy Cycle



- ... Present drought and precipitation shifts that are consistent with changing climate scenarios associated with increased levels of CO2 from coal fired power plants-- the “New Normal”!
- Missouri River dam operations are managed by the Corps of Engineers based upon the last 100 years of flow -- Hydropower production for WAPA based on the “Old Normal”.
- Hydropower is only an incidental responsibility of the Corps of Engineers which holds back water due to drought and flood conditions, resulting in less hydropower production.
- Hydropower marketing administration (WAPA) buys lignite coal power to offset hydropower shortfalls, which only increases the atmospheric CO2 intensity, resulting in greater drought and precipitation shifts, leading to ...

# Northern Plains Reservations in WAPA-PS Service Territory: Eleven of 23 Reservations with anemometer wind data in 2002



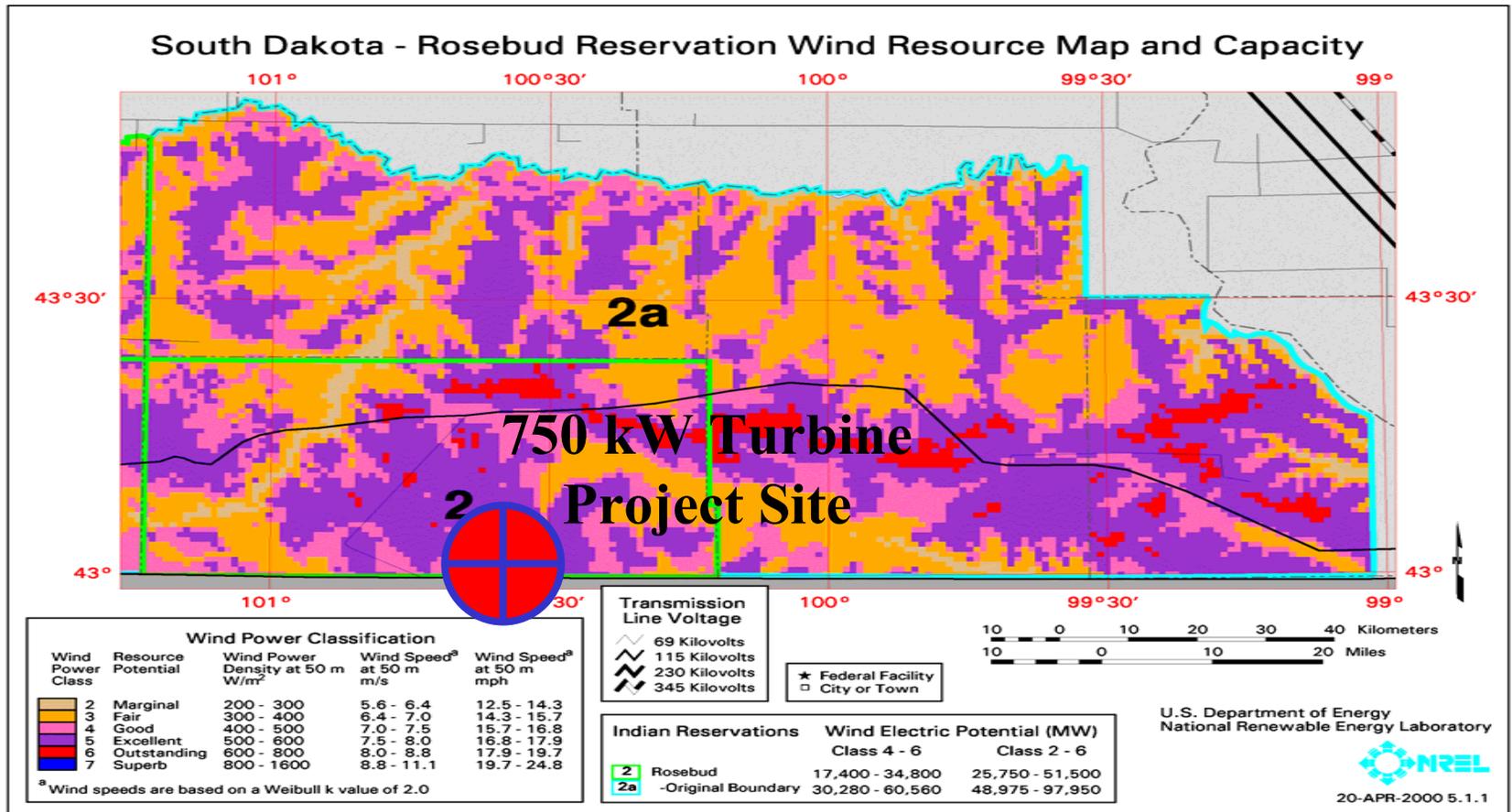
Reservations with available wind data: 4 in North and 4 in South Dakota, 2 in Montana, and 1 in Nebraska.



Reservations with no wind data available: 4 in Montana, 4 in South Dakota, 3 in Nebraska and 1 in Wyoming.

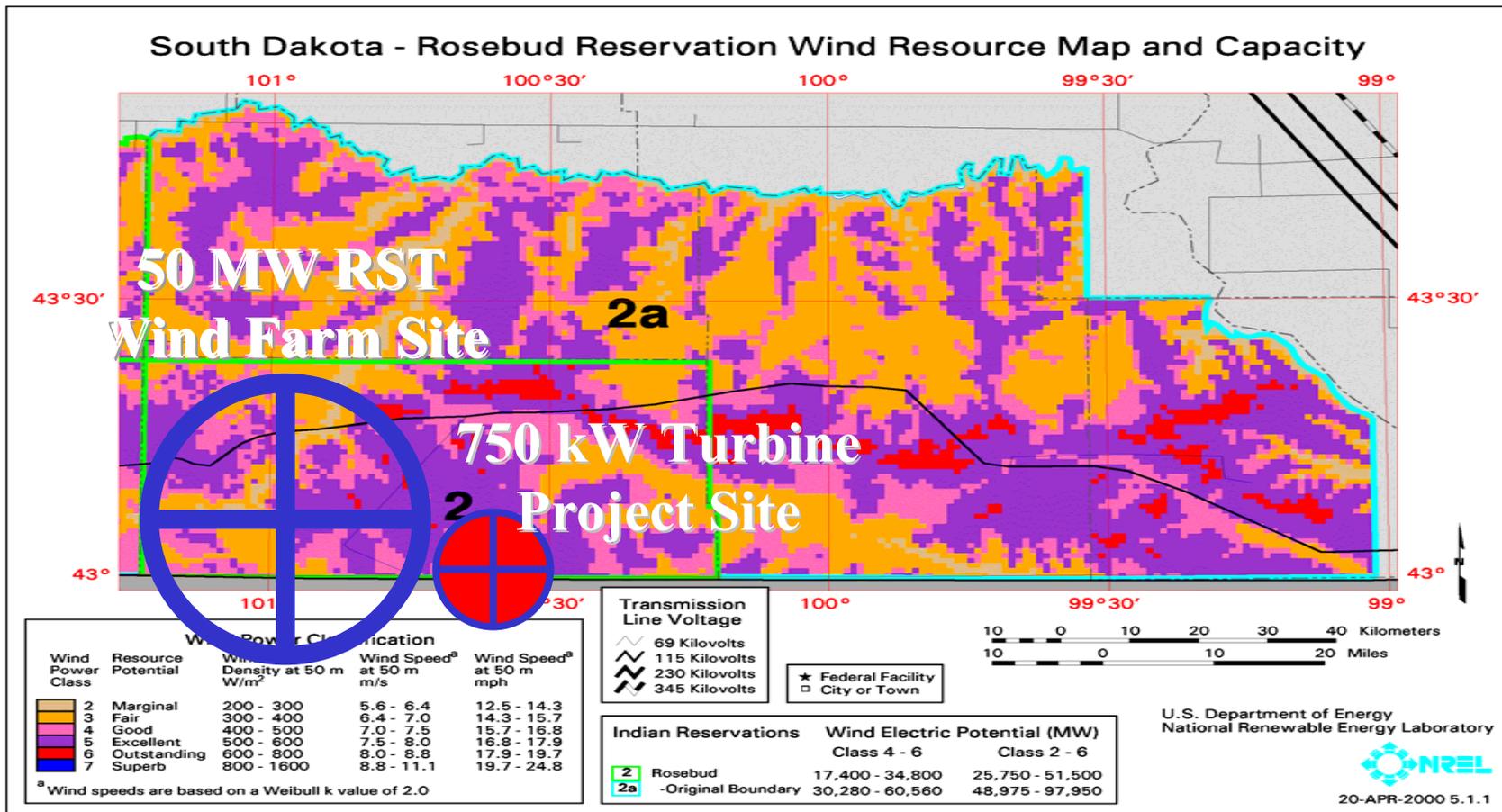
# PHASE ONE: 750 kW Wind Turbine - Rosebud - 2003

First 750 kW utility scale wind turbine to be owned and operated by the Rosebud Sioux Tribe through a Tribal partnership with Department of Energy (DOE), the Rural Utilities Service (RUS/USDA), DisGen, Inc. (Engineering) and NativeEnergy, Inc. (Green Tags)



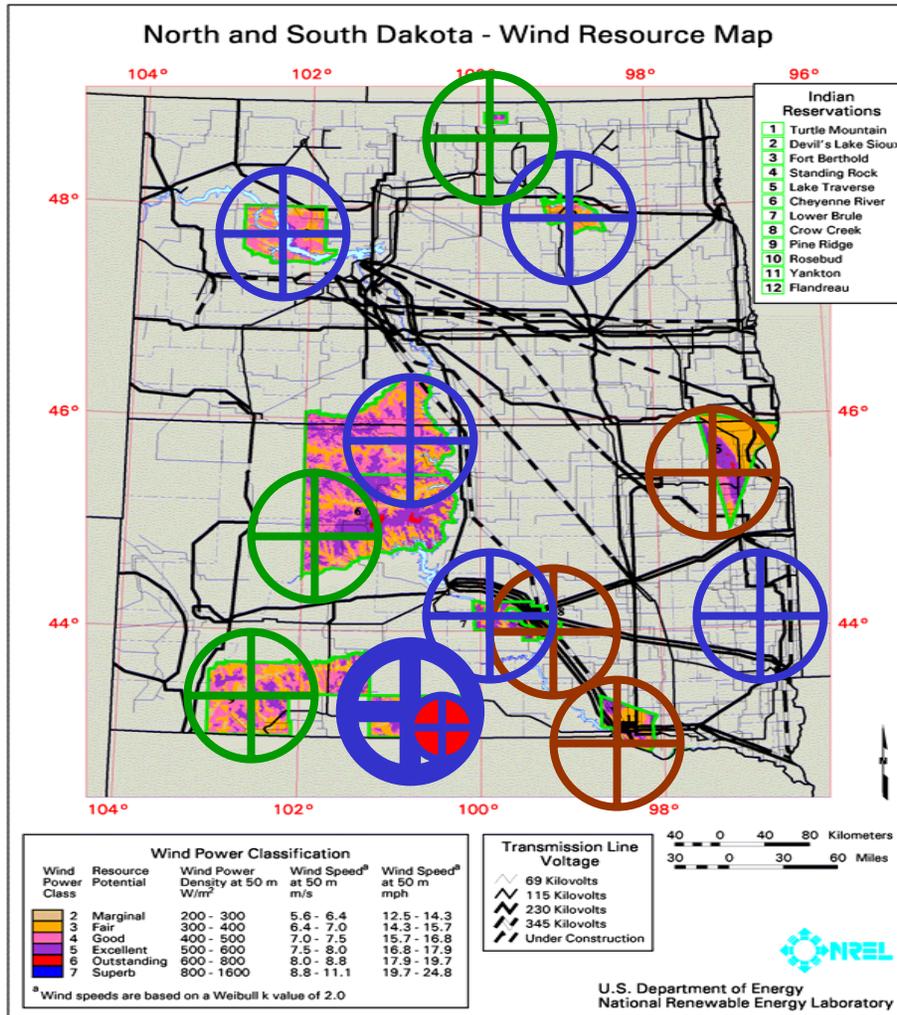
# PHASE TWO A: 30-50 MW Wind Ranch - Rosebud - 2004

First Tribal Utility Scale 50 MW Wind Ranch to be owned and operated by Rosebud Sioux Tribe through a Tribal partnership with Department of Energy, Rural Utilities Service w/ other federal / private partners for Green Power & Tag sales.



# PHASE TWO B: Distributed Intertribal Wind Ranch - 2004-5

## All COUP Reservations Will Have Commercial Anemometer Wind Data



### GOAL 2005:

- 50 meter tower anemometer wind data for ALL COUP Tribes
- Intertribal Wind Development Plan among Interested COUP Tribes

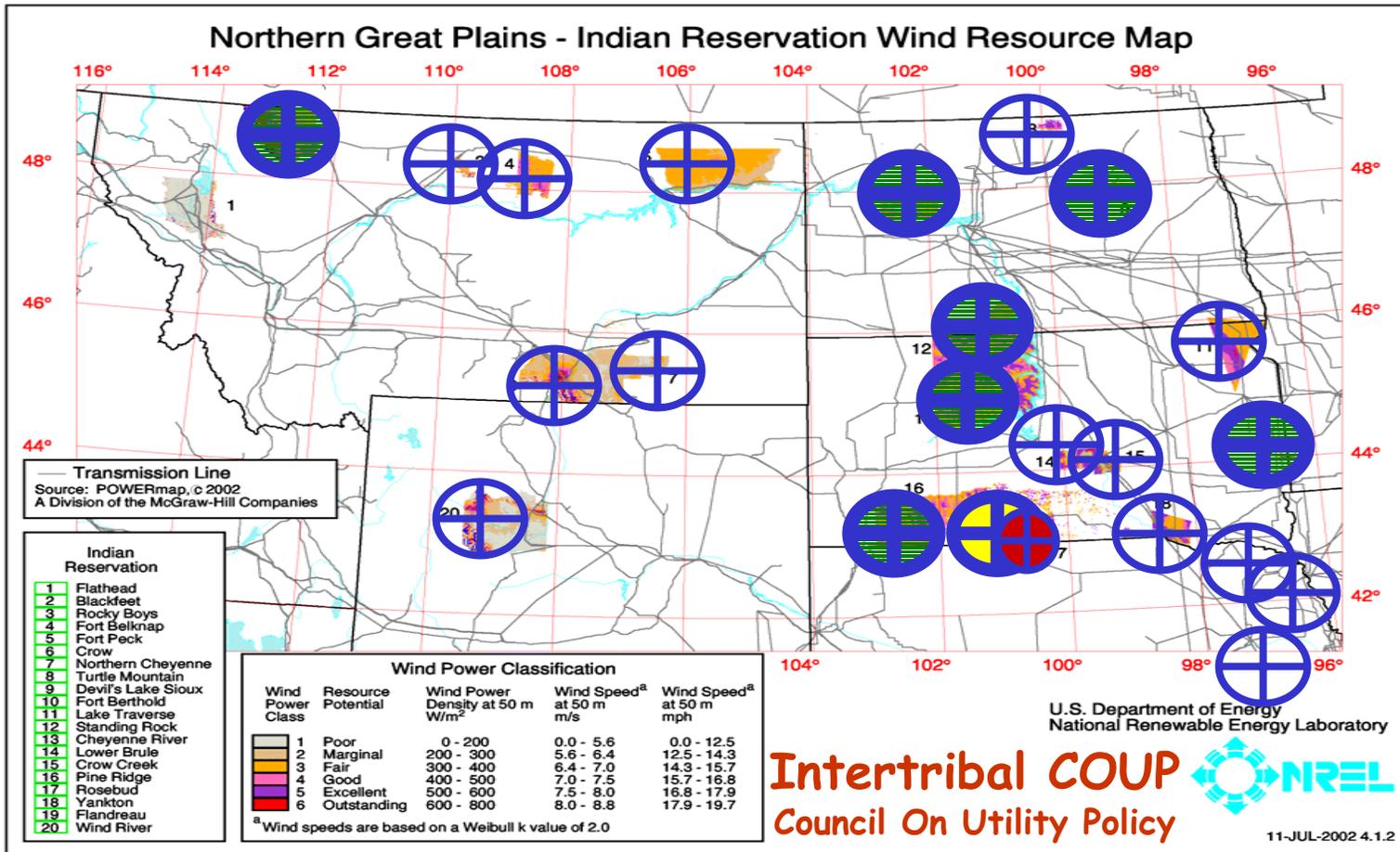
### Intertribal COUP Tribes in North and South Dakota:

- ⊕ Without Wind Data
- ⊕ With Wind Data
- ⊕ Commercial Data
- ⊕ 30-50 MW Ranch
- ⊕ .75 MW

Intertribal COUP  
Council On Utility Policy

# PHASE TWO C: Commercial Wind Data by 2004

## Commercial Data for All Northern Great Plains Tribes



**By end of the 2004 Wind Season**

Tribes with commercial wind anemometer data:

Tribes with operational 100 to 750 kW wind turbines:

Tribes with commercial wind clusters/ ranches: 10 MW



50 MW

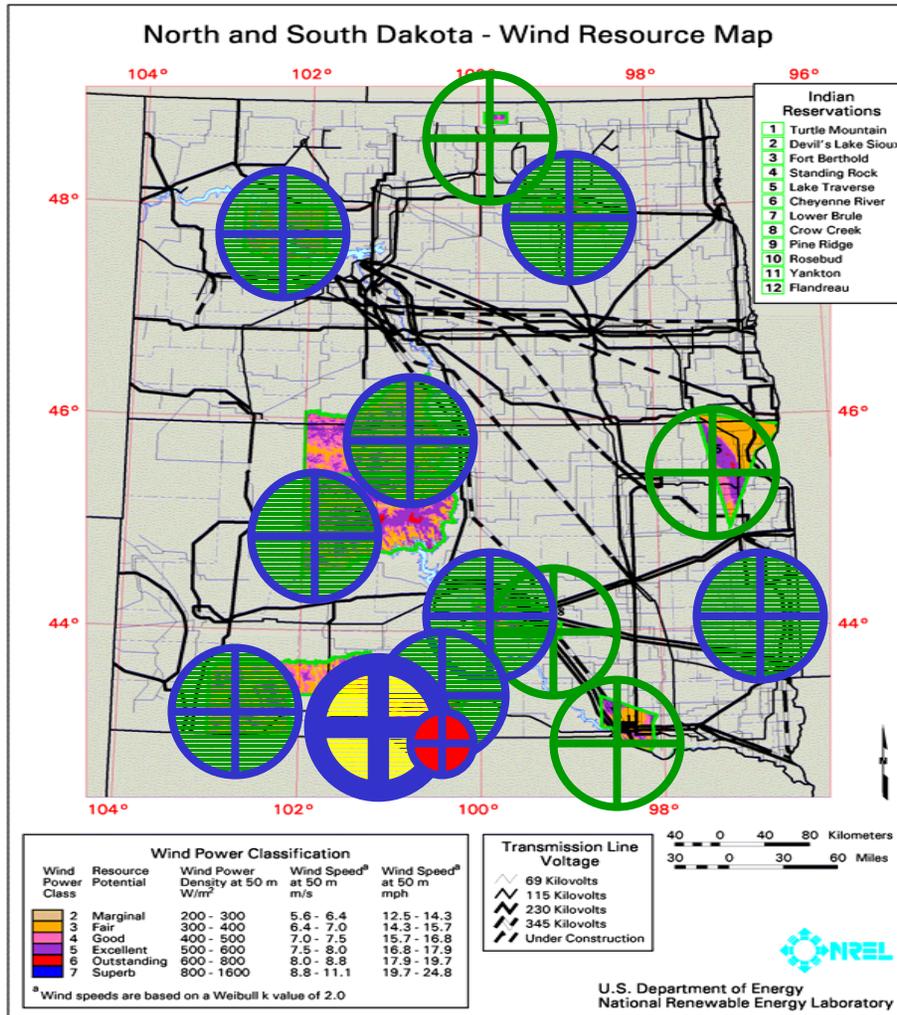


# PHASE THREE: Distributed 80 MW Intertribal Wind Ranch

## 10 MW Clusters Distributed Across 8 COUP Reservations - 2004-5

**GOAL 2004-5: 130.75 MW of COUP Tribal Wind Developed in the Dakotas**

First Intertribal Wind Ranch to be owned and operated by the COUP Tribes through federal and private collaboration and partnerships for Green Power and Green Tag sales. Intertribal COUP will encourage and support data collection for all Tribes.



**Intertribal COUP Tribes in North and South Dakota:**



**With wind data**



**.75 MW**



**10 MW Cluster**

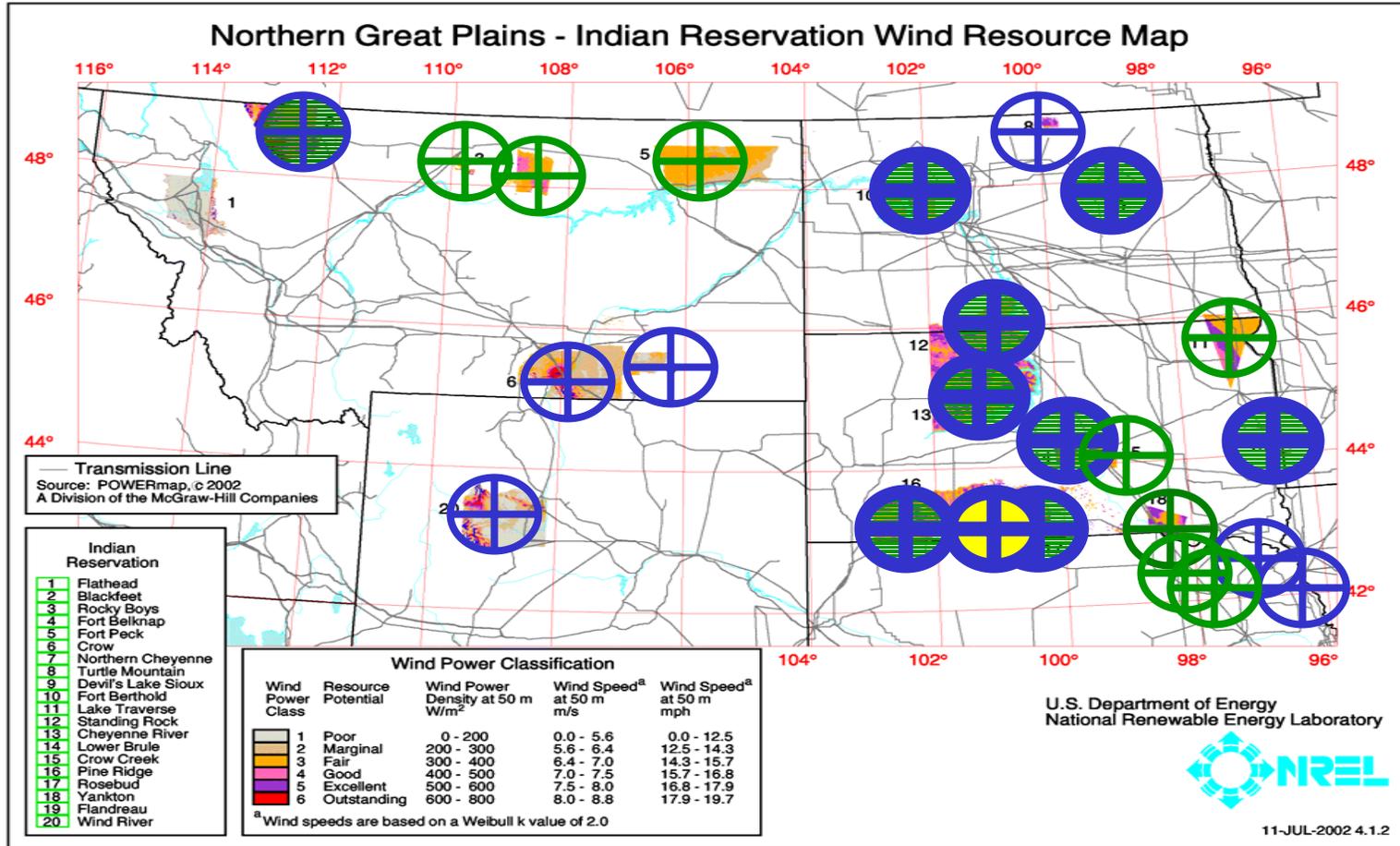


**50 MW Ranch**

**Intertribal COUP  
Council On Utility Policy**

# PHASE THREE: Northern Plains Reservations:

All COUP Tribes have at least 10 MW wind clusters by 2005

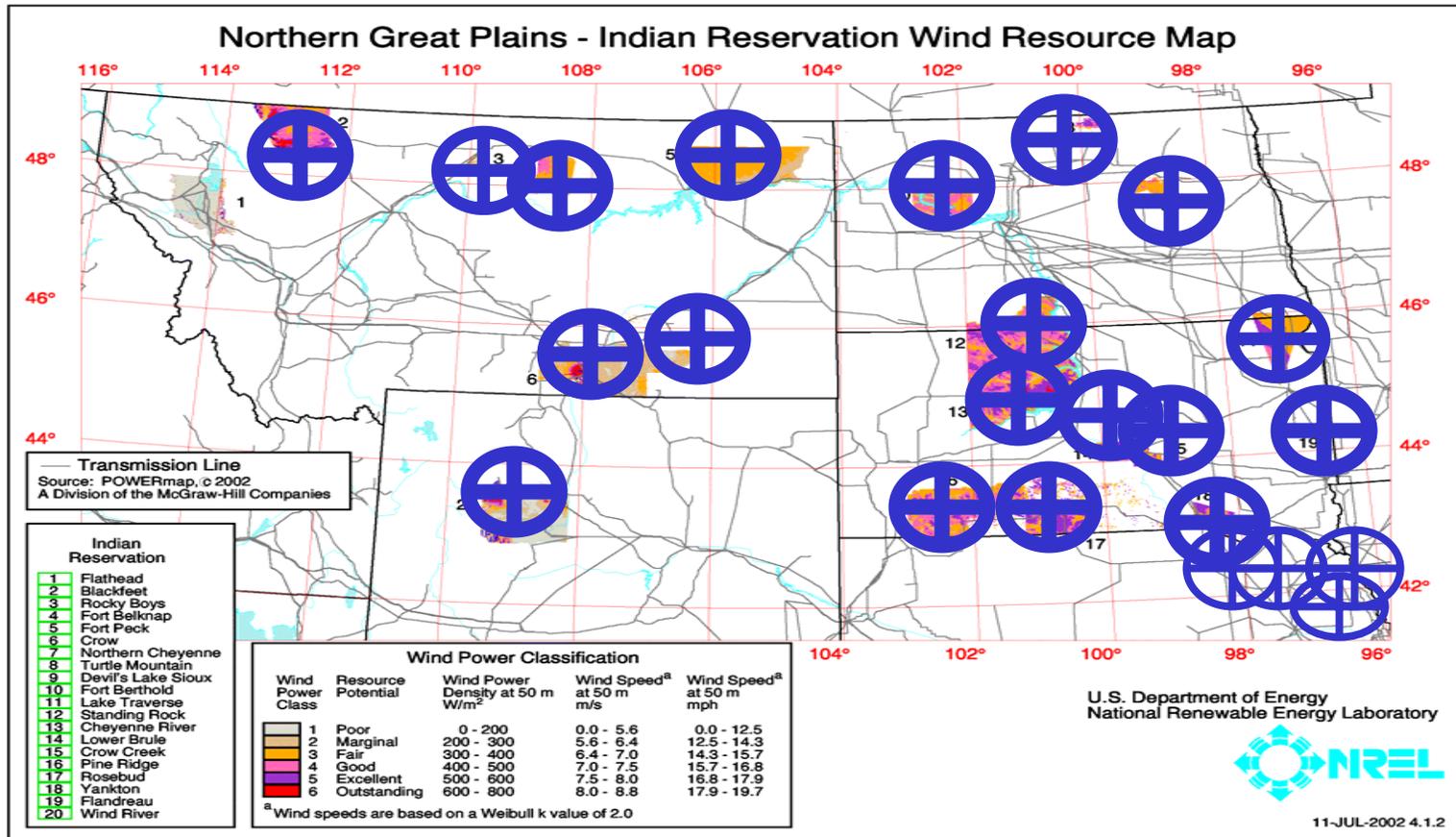


COUP Tribes and/or Affiliates with DOE wind projects 

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Council On Utility Policy

# PHASE FIVE: Northern Plains Reservations

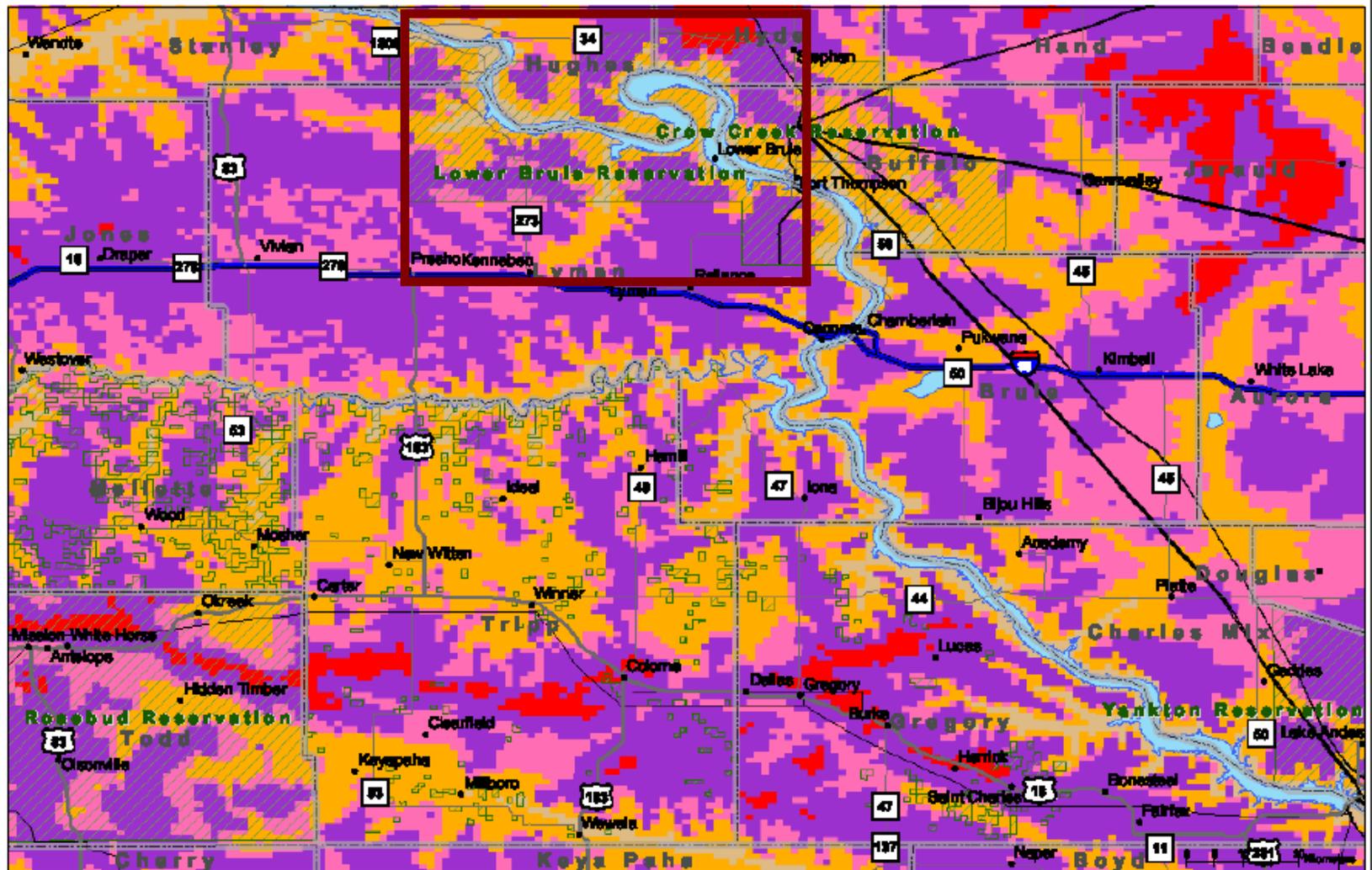
## All Interested Great Plains Indian Reservations Have Commercial Wind Ranches by 2007-10



**Intertribal COUP Proposal to Western Area Power Administration:  
Distributed Wind Facilities of up to 150 MWs on each Reservation  
Total Tribal Wind Generation of up to 3,000 MWs**

**Intertribal COUP  
Council On Utility Policy**

# Lower Brule Sioux Reservation



 Counties  
 Major water  
 Indian Reservation  
 Cities

**Major Roads**  
 Interstate Hwy  
 US Hwy  
 State Hwy

**Transmission Lines\***  
 Below 230kV  
 230kV - 498kV  
 Greater than 500kV

**Wind Power Class and Resource Potential**  
 1 - Poor  
 2 - Marginal  
 3 - Fair  
 4 - Good  
 5 - Excellent  
 6 - Outstanding  
 7 - Superb

\* Source: POWERmap, ©2002 Pacific, a Division of the McGraw-Hill Companies

# A Few Statistics

**43% of all Native Americans in the lower 48 are in Western's service area**

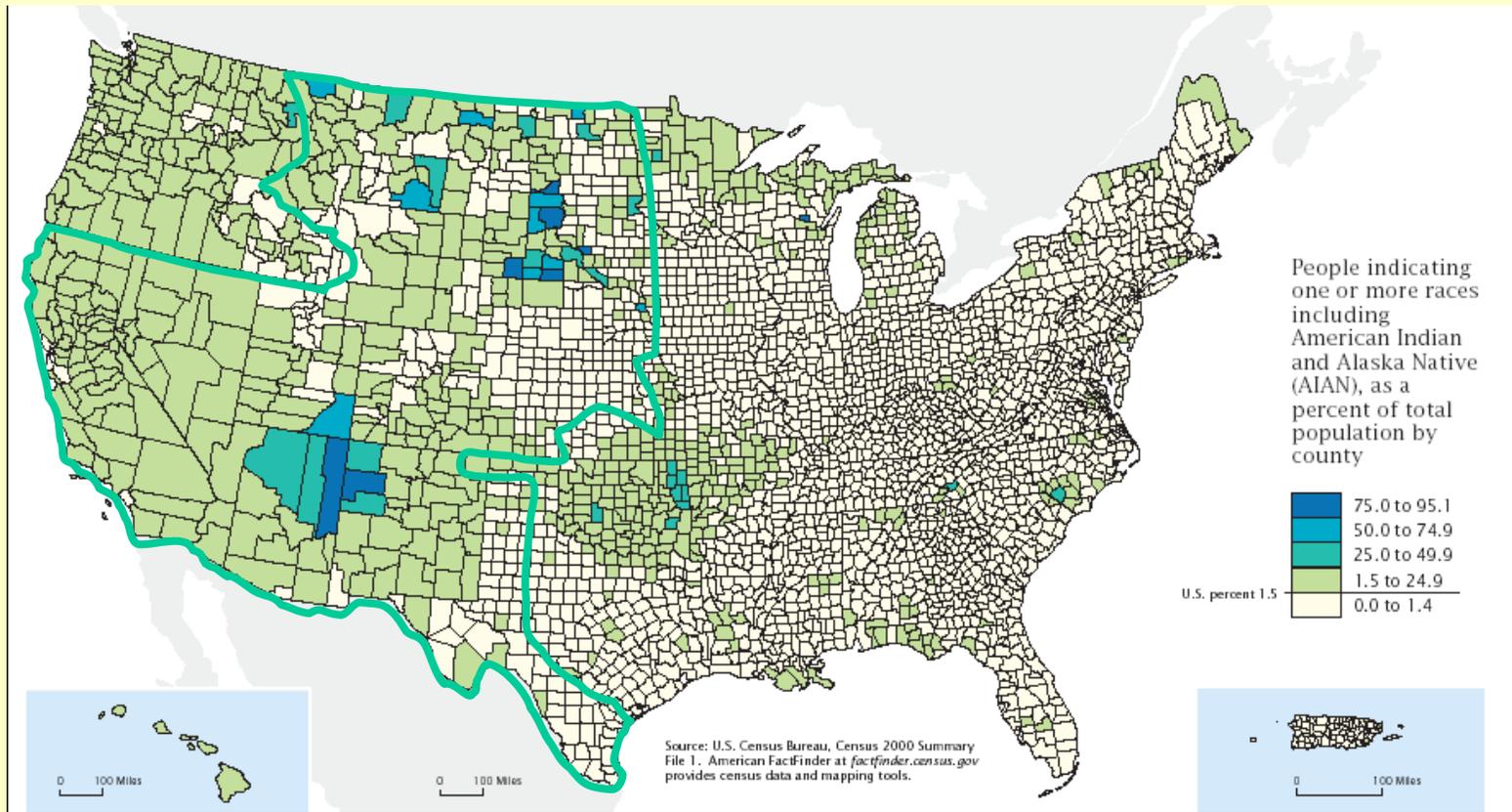
**29 counties where Tribal population > 25%**

**17 counties where Tribal population > 50%**

**300+ Tribes in Western's service area**

**1.96% of the population in Western's service area are Indian**

**1.2% of Western sales & revenue come from Tribes**





# Native Wind Powering America

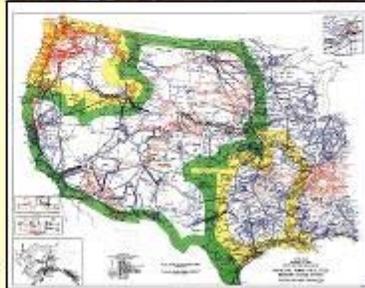
WWW.ENERGYINDEPENDENCEDAY.ORG



## Serving the West with Federal Hydropower

### ... And Tribal Renewable Energy

- Cities & Tribes are on WAPA grid as eligible WAPA "Preference Customers"
- Federal trust responsibility to Tribes
- Sustainable Homeland Economies
- Great Wind/Hydro Dynamo Potential
- Diminishing Hydropower Resource
- Once 100% renewable, now only 20% hydropower and 80% coal
- Restore Federal Renewable Energy Grid 30% wind / 20% hydro / 50% coal-gas

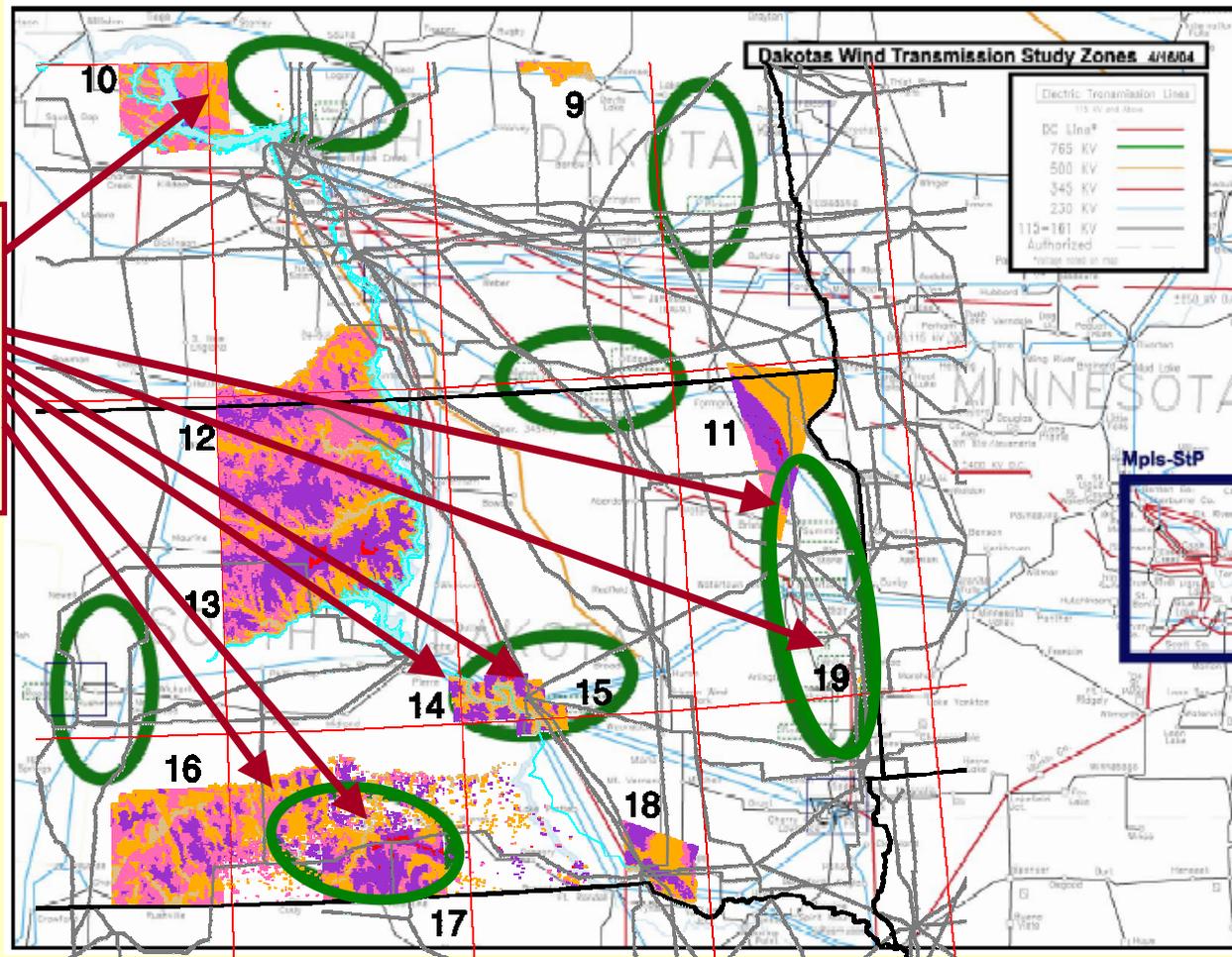


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# WAPA / WIND INTEGRATION STUDY AREA

## Includes Several Reservation Interconnection Sites



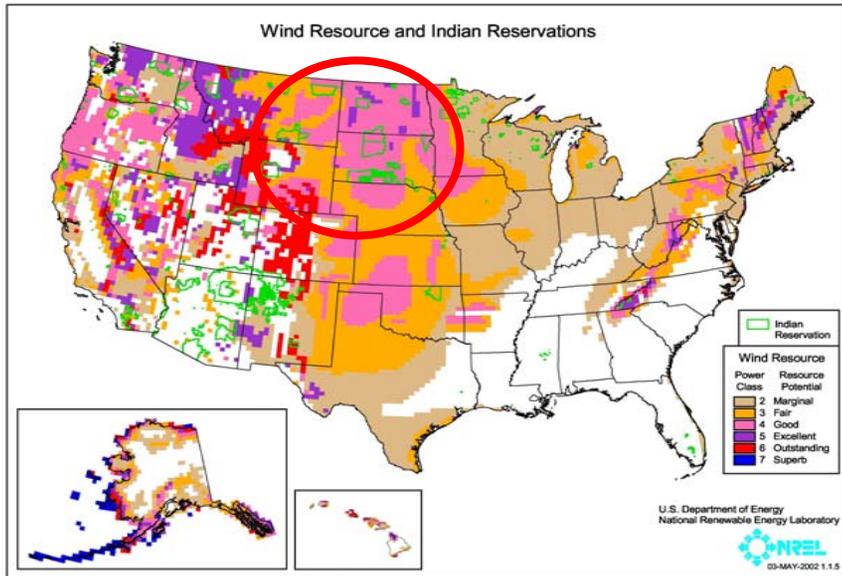
COUP  
Proposed  
WAPA  
Wind Study  
Site Areas

<http://www.wapa.gov/ugp/study/DakotasWind/Zone%20Map.pdf>



# Learning That We Live in A WINDSHED !

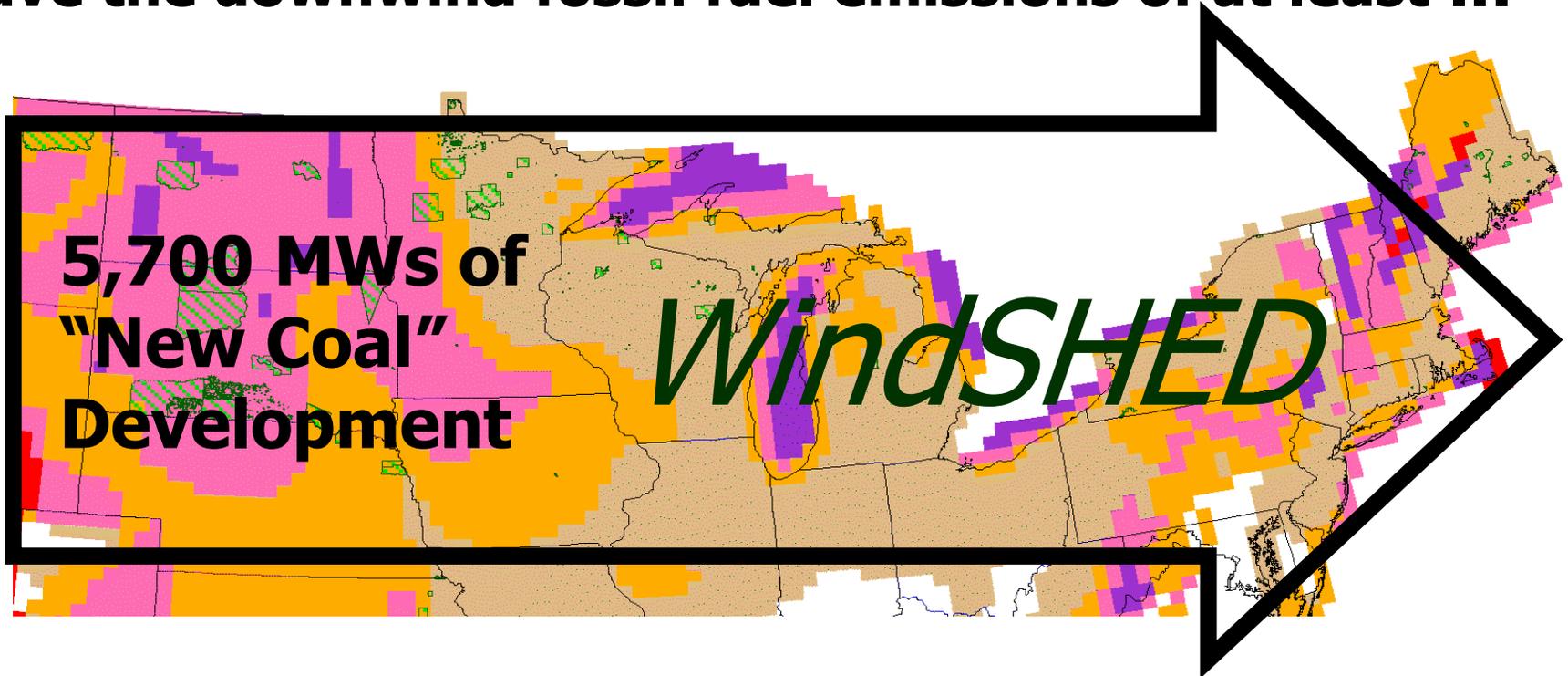
The Richest Renewable Energy Regime in the World is Just Upwind from the Region of Greatest Energy Consumption and Acid Rain Impacts in North America!!



Sustainable Homeland  
Economic Development  
based on Tribal Wind  
Energy Generation

Downwind communities  
support and benefit from  
Tribal Wind Energy

**A CHOICE: In this decade, the Northeastern U.S. can have the downwind fossil fuel emissions of at least ...**



**There are 5,700 MW of new coal generation projected for the "high boundary" case announced in the four northern Great Plains (MT, WY, ND & SD) states through 2007, complete with:**

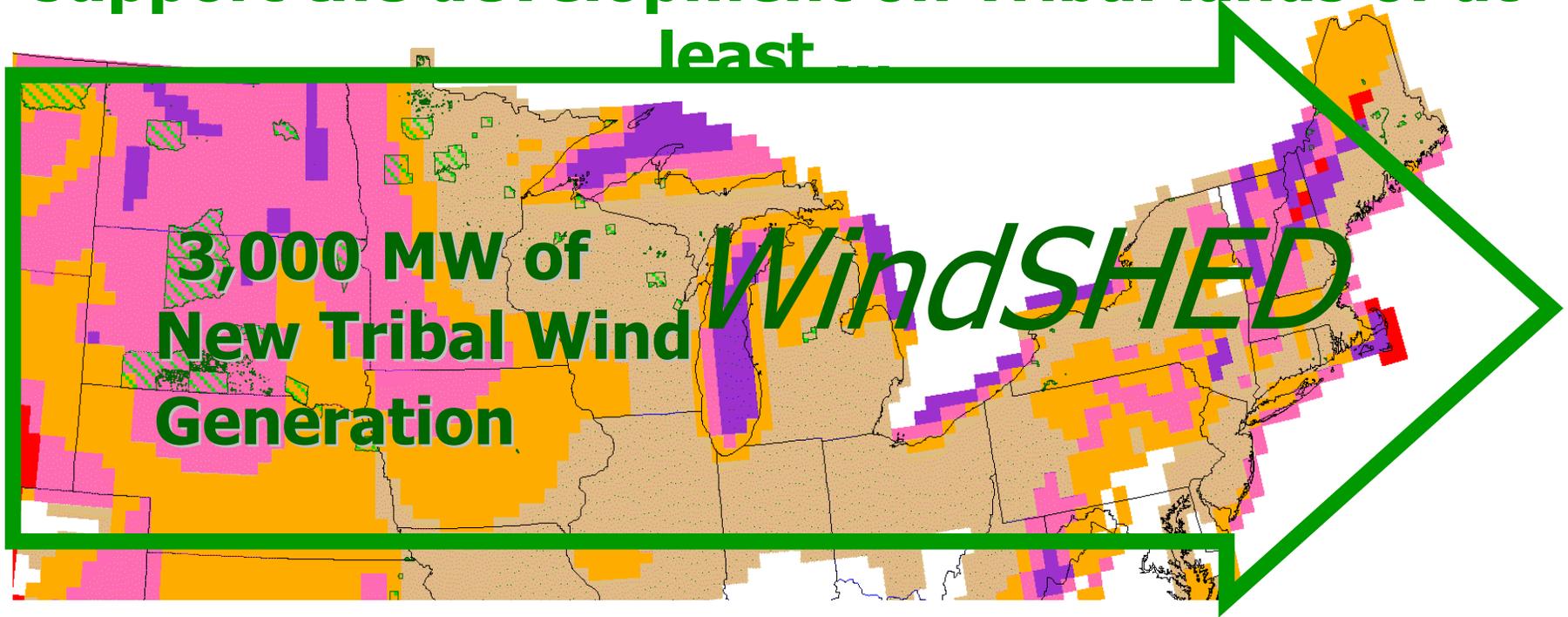
- **31,986,746 tonnes of CO<sub>2</sub>** (contributing to global warming)
- **28,962 tonnes of SO<sub>2</sub>** and **22,770 tons of NO<sub>x</sub>**, (acid rain downwind), and
- **691 kilograms of mercury** (air borne toxin to downwind waters & wildlife)

**estimated to be annually associated this new fossil fuel development.**

[www.EnergyIndependenceDay.org](http://www.EnergyIndependenceDay.org)

**Intertribal COUP**

**With “*Tribal Green Tags*” the *WindSHED* can support the development on Tribal lands of at least**



- ***Tribal Green Tags*** (downwind environmental benefits associated with upwind clean energy development) generated by tribally owned, utility scale wind turbines developed on Northern Great Plains Indian Reservations.
- ***Tribal Green Tags*** result direct and practical improvements in the economic and ecological health in our region’s *WindSHED*, for both the host reservations and for all the downwind communities.



[www.energyindependenceday.org](http://www.energyindependenceday.org)

I.C.L.E.I.

Local  
Governments  
for Sustainability



**Council On Utility Policy**  
*Tribes Building Sustainable Homeland Economies*



**Honor the Earth**

a voice for the earth...a voice for those not heard

**Intertribal COUP**

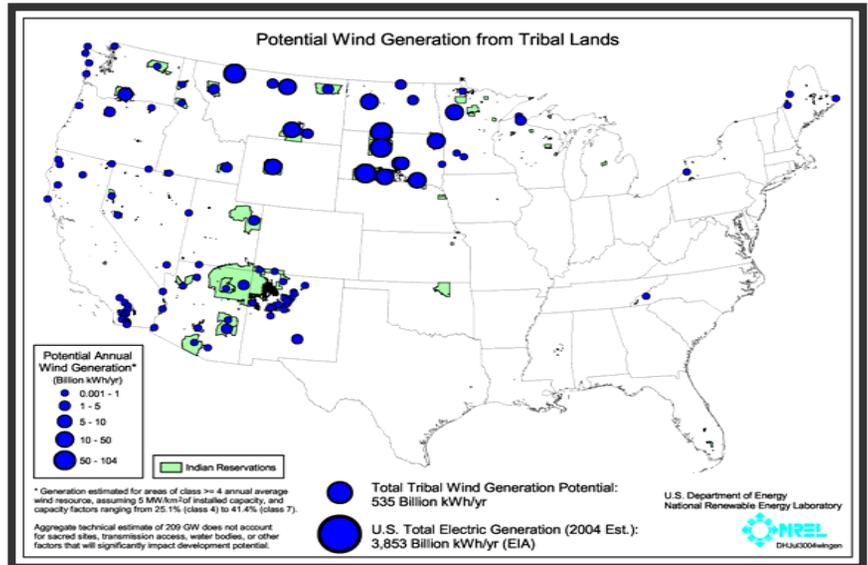
[www.EnergyIndependenceDay.org](http://www.EnergyIndependenceDay.org)

# Intertribal COUP Plan For Partnership: *150 US Cities for Climate Protection*

*(ICLEI ~ International Council for Local Environmental Initiatives)*

## *American Indian Tribes and Nations*

### **Coupling Urban *Kyoto* Commitments with Tremendous Tribal Renewable Resources**





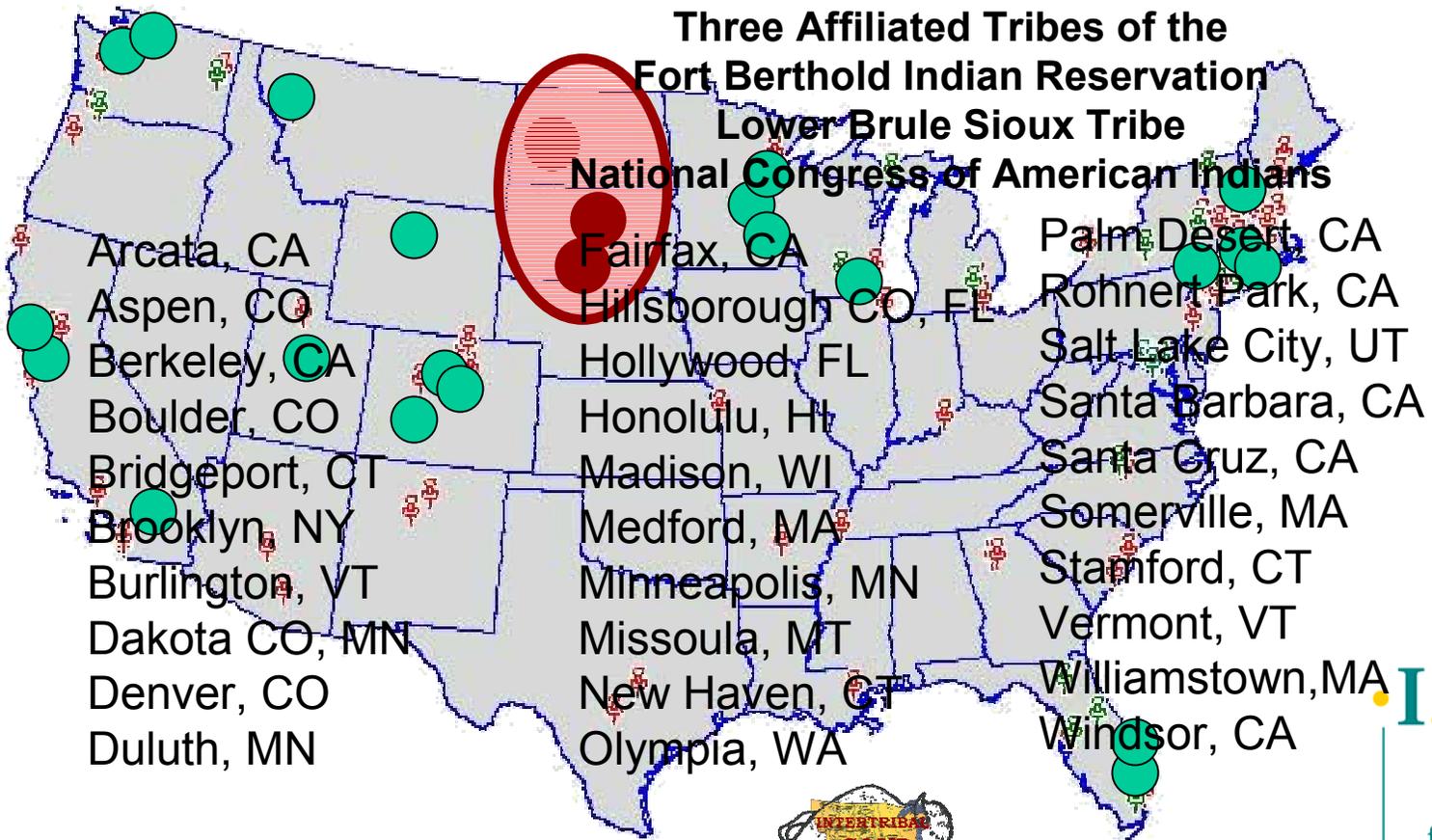
# American Leadership Energy Independence Day. org

## Local Government/Tribal Partnership Signers to Date

Great Plains Tribal Chairman's Association  
Rosebud Sioux Tribe

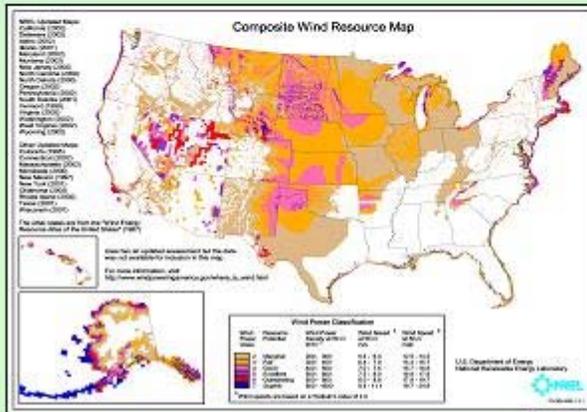
Three Affiliated Tribes of the  
Fort Berthold Indian Reservation  
Lower Brule Sioux Tribe

National Congress of American Indians



# Tribal Wind / Federal Hydropower Renewable Energy Dynamo

## World's Largest Hydropower Storage System Could Operate as a Wind Storage Battery



## TransAmerica Generation Grid for Wind/Hydro Dynamo



<http://www.windpoweringamerica.gov>

[http://www.solpath.com/luna/admin/documents/NEITS\\_AWEA\\_presentation\\_032904.pdf](http://www.solpath.com/luna/admin/documents/NEITS_AWEA_presentation_032904.pdf)

## New and Upgraded Transmission Needed To Deliver Clean Abundant Wind Power to Load Centers